[1] These 23 errata were reported in *Astr. Nach.* (1939).—EDITOR.
[2] These 6 errata were reported in *MTAC* (1943 and 1947) by L. J. C.—EDITOR.

136. J. T. PETERS, *Siebenstellige Logarithmen der trigonometrischen Funktionen von 0° bis 90° für jedes Tausendstel des Grades*. Berlin, Preussische Landesaufnahme, 1921.

The following two errors were found during the comparison of this table with proofs of a new CHAMBERS' six-figure table. The comparison covered log sines and log tangents for 0°(0.°001)5°.

P. 74, log tan 3°.619, *for* 8.800 0440, *read* 8.801 0440;
P. 80, log sin 3°.933 *for* 8.836 2102, *read* 8.836 2602.

Neither of these errors occurs in the six-figure or ten-figure tables by Peters of the same functions, published in 1922 and 1919 respectively, and having the same argument.

L. J. C.

137. J. T. PETERS, *Zehnstellige Logarithmentafel*, v. 2, Berlin, 1919.

On p. 762, 38°.000–38°.050, the third digit from the left in the difference column for log tang and log cotg should be 6 instead of 7. Thus for the first difference read 156237, not 157237. This error persists for the entire page.

ALFRED D. SOLLINS

U. S. Coast and Geodetic Survey

UNPUBLISHED MATHEMATICAL TABLES

Reference has been made to an unpublished mathematical table by John Todd in QR35.

69[A].—H. E. SALZER, *Table of Factorials*. Manuscript in possession of the author, NBSCL.

The manuscript is a table of $N!$ for $N = [1(1)1000; 16S]$. Although only 16S are guaranteed, the entries are almost certainly correct to 17S, and there is a high probability that they are good to even 18S, with an error no more than several units in the eighteenth significant figure.

H. E. SALZER

70[E].—G. W. SPENCELEY, *Tables of Hyperbolic Functions*. Manuscript in possession of the author, Miami University, Oxford, Ohio.

I have computed tables of $\sinh x$ and $\cosh x$ for $x = [1°(1°)1080°; 28S]$.

G. W. SPENCELEY

71[I].—H. E. SALZER, *Tables of Coefficients for Checking and Interpolation of Functions Tabulated at Certain Irregular Logarithmic Intervals*. Tables in possession of the author.

Many small tables exist of functions that behave as polynomials in $\log x$. Such functions are usually tabulated for arguments proportional to

$$1, \quad 2, \quad 5, \quad 10, \quad 20, \quad 50, \quad 100, \quad 200, \quad 500, \quad 1000.$$

To check such a table for smoothness or to interpolate one uses divided differences. The first of the ms. tables gives the requisite coefficients A for expressing the $(n-1)$-th divided difference of the function $F(x)$ as

$$A_1F(1) + A_2F(2) + A_3F(5) + A_4F(10) + \cdots.$$

The coefficients are given to 8S for $n = 3(1)10$. Two other tables are based on the points

1, 5, 10, 50, 100, 500, 1000 & 1, 2, 10, 20, 100, 200, 1000.

D. H. L.

AUTOMATIC COMPUTING MACHINERY

Edited by the Staff of the Machine Development Laboratory of the National Bureau of Standards. Correspondence regarding the Section should be directed to Dr. E. W. Cannon, 418 South Building, National Bureau of Standards, Washington 25, D. C.

Technical Developments

The leading article of this issue of *MTAC*, "The IBM pluggable sequence relay calculator," by Dr. W. J. Eckert is our current contribution under this heading.

Discussions

The second article of this issue of *MTAC*, "Inversion of a matrix of order 38" by Mr. H. F. Mitchell, Jr., is the first of our contributions under this heading. The following five papers are revised summaries of talks delivered at the meeting of the Association for Computing Machinery by members of the staff of the Ballistic Research Laboratories, Aberdeen Proving Ground, Maryland, on December 11–12, 1947; see *MTAC*, v. 3, p. 132–133.

Airflow Problem Planned for the ENIAC

Given a body of revolution with sharp nose immersed in a steady uniform flow at sufficiently high Mach number, it is permissible to neglect viscosity and body forces.

If the independent variables α and β, constant on characteristics, are introduced, it can be shown that the differential equations take the form

$$\begin{aligned}
&Hy_\alpha - (K+R)x_\alpha = 0\\
&Hy_\beta - (K-R)x_\beta = 0\\
&Hu_\alpha + (K-R)v_\alpha + (P+Q)x_\alpha = 0\\
&Hu_\beta + (K+R)v_\beta + (P-Q)x_\beta = 0\\
&dz = yA(-vdx + udy)
\end{aligned}$$

where x and y are cylindrical coordinates of a point P, u and v are the corresponding velocity components, and H, K, R, P, Q, A are known functions of y, u, v, z.

The boundary conditions which complete the formulation of the problem are of the form

$$dy/dx = F(x, y) \qquad v/u = F(x, y)$$

on the contour of the body, and

$$G(u, v) = 0 \qquad dy/dx = H(u, v)$$

on the shock-wave.

Approximating the solutions locally by polynomials of first, second, or third degree, one obtains procedures of differing orders of accuracy.

The Airflow Branch of the Ballistic Research Laboratories, with the aid of a group of mathematicians at the Moore School of Electrical Engineering, have programmed for computation by the ENIAC the solution of a 9-parameter family of problems of the above type by a second-order method. The parameters are the Mach number, the coefficients of